Summer 2005

CEG 720-01: Computer Architecture

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CEG 720: Computer Architecture
Summer 2005, 4:10-5:25, M. W., at 154 RC

1. **Instructor:** Jack JEAN, 334 RC, 775-5106, email: jjean@cs.wright.edu
   Office Hours: 3-4, 5:30-6 PM, M,W (or by appointment)

2. **Textbook:** COMPUTER ARCHITECTURE: A QUANTITATIVE APPROACH, 3rd edition, John Hennessy and David Patterson, Morgan Kaufmann, 2003

3. **Course Contents:**

Topics	Chapters
Overview : Sequential Machines, PC Architecture, Parallel Machine Classification	
Performance Measure, Amdahl's Law	1
Instruction Set Architecture: RISC/CISC, MMX, SSE	2
Pipelining and Pipeline Hazards	Appendix A
Instruction Level Parallelism (ILP), Dynamic Scheduling, Branch Prediction, Speculation	3
ILP with Software Approaches: Loop Unrolling, Software Pipelining, Predicated Instructions, IA-64 EPIC	4
Midterm (July 11)	
Cache and Memory Hierarchy	5
Multiprocessors and Multithreading	6
Storage Systems, Buses, RAID	7
Interconnection Networks and Clusters	8
Final (August 17)	

The instructor will be out of town the first week of August. Those two lectures in that week will be re-scheduled.

4. **Grading:** [90,100]→A, [80,90) →B, [70, 80) →C, [60, 70) →D, [0, 60) →F

   (1) Midterm (35%): July 11 (Mon.), closed book test.

   (2) Final (40%): August 17 (Wed.), non-comprehensive, closed book test.

   (3) Homework (10%). (No programming is involved.)

   (4) Final Report (15%): due August 10 (Wednesday). You need to either (1) summarize and compare three recent papers about computer architecture or (2) work out a hardware/software design project. A page that identifies a working title and a list of references is due July 6 (Wed).